PICTURE OF THE MONTH

Radiation fog in valleys is easily identified in satellite photographs by its unique appearance. The upper surface appears uniformly white and smooth in texture. The periphery of the overcast usually is quite well defined. Fog lying in mountain valleys often has an irregular appearance which can be compared to a contour line on a topographic chart. This occurs because the top of the fog layer is usually uniform in height and fills the valley in much the same way that water fills a depression.

The ESSA 3 photomosaic in figure 1 shows many of the valleys of the western United States filled with fog. Shaded areas on the topographic map in figure 2 correspond to the three major regions indicated by R on the satellite photograph. At the time these data were acquired a large surface High dominated the southwestern United States. This system had been stationary over the region for about ten days. The most prominent fog area lies between the Coastal Range and the Sierra Nevada, stretching from the northern tip of the Sacramento Valley to the southern end of the San Joaquin Valley. An arm of fog also extends westward along the lower Sacramento River and covers most of the San Francisco Bay area.

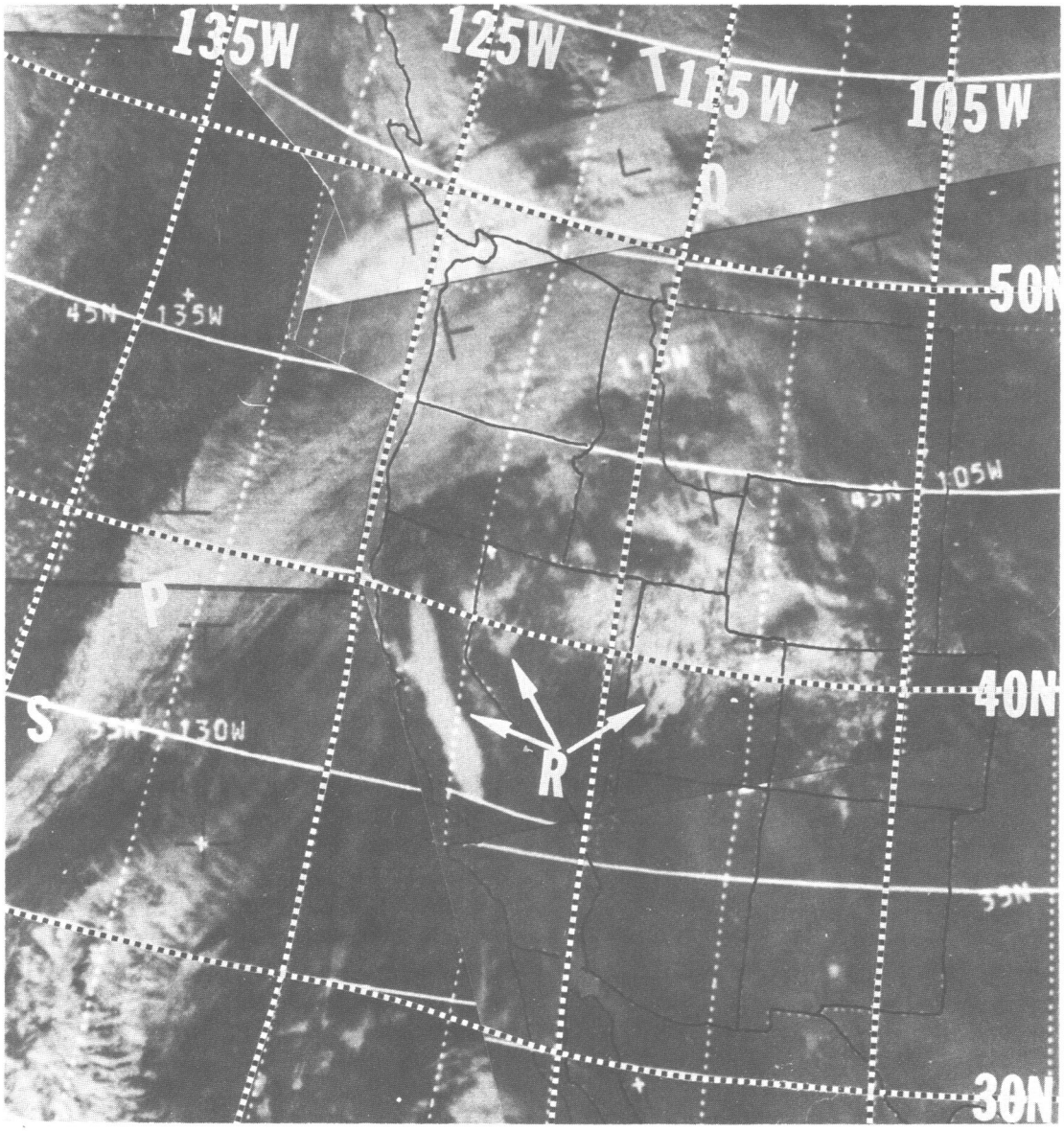

FIGURE 1.—ESSA 3 photomosaic. Passes 984–985, 1940–2134 GMT, December 19, 1966.

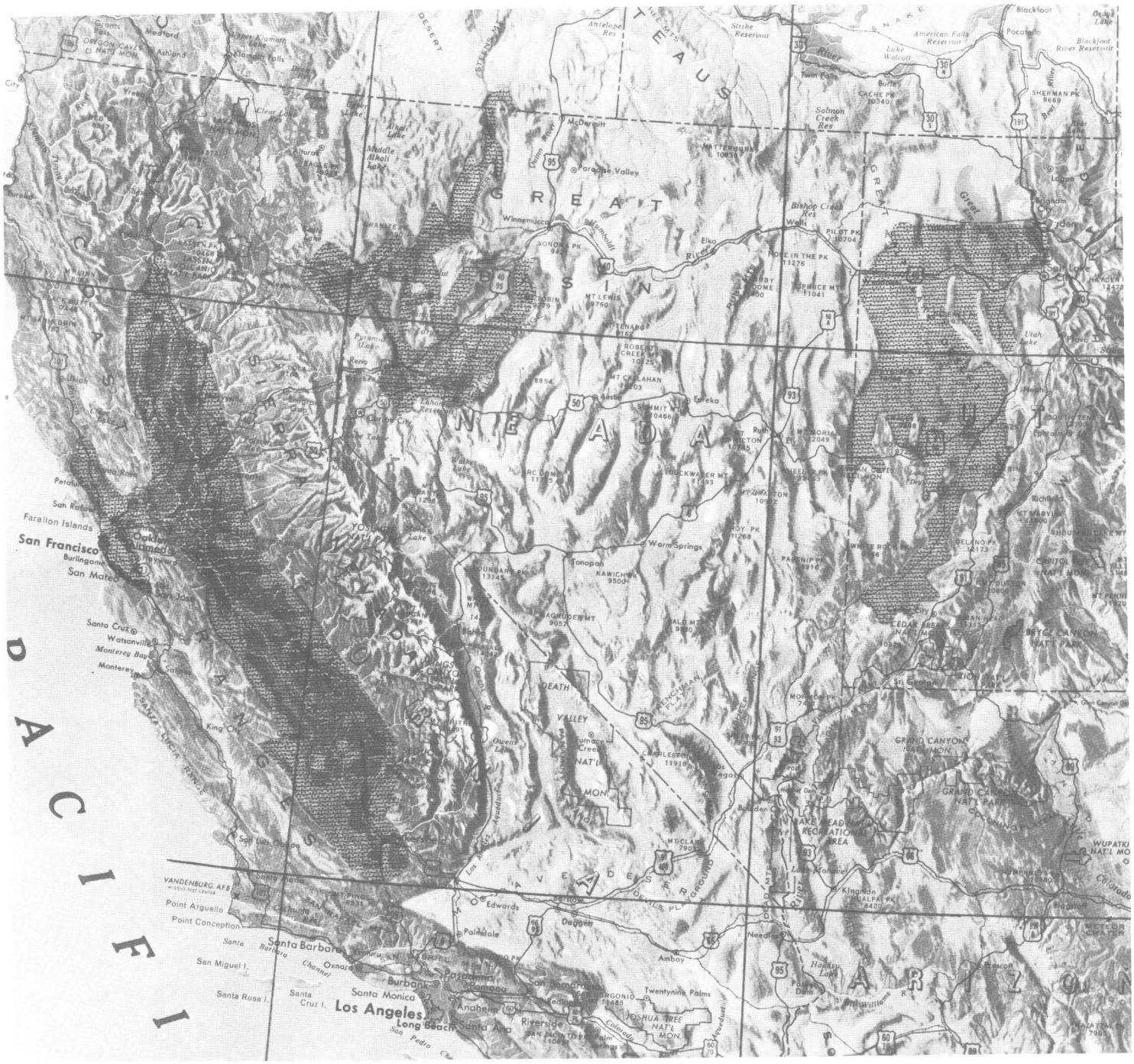

FIGURE 2.—Topographic map of section of western United States with major fog areas shown on figure 1 denoted by stippling. Map © 1959, Jeppesen Co. Denver, Colo.

Valley fog in northwestern Nevada covers most of the Desert Valley, Black Rock and Smoke Creek Deserts, and the area around Carson Sink. Higher ground ringing this fog area includes the Santa Rosa and Humboldt Ranges and the Stillwater Mountains on the east, and the Pine Forest Range and Virginia Mountains on the west. Fog in western Utah covers most of the Great Salt Lake Desert and Sevier Desert. Several of the higher mountain peaks and ranges protrude through the fog layer, appearing as dark spots or holes in the overcast.

Another feature of interest in figure 1 is the cold frontal cloud band along points S, P, Q. The northern edge of the high-level cloud shield is quite sharp and casts a shadow on the lower underlying cloud field from Vancouver Island to point T.

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